

REMARKS

This communication is in response to the Final Office Action mailed on June 14, 2005 and the Decision on Appeal issued on June 30, 2009.

With this response, claims 2-5, 9, 12, 13, and 15-38 are canceled without comment, prejudice, or disclaimer. New claims 39-57 are added. Applicant respectfully requests consideration and allowance of the newly added claims.

Claim Rejections

Claims 2, 5, 9, 12-13, and 15-38 were rejected under 35 U.S.C. §103(a) as being unpatentable over combinations of U.S. Patent No. 6,182,146 (“Graham-Cumming”), U.S. Patent No. 5,802,305 (“McKaughan”), and U.S. Patent No. 6,493,824 (“Novoa”). With this response, claims 2, 5, 9, 12-13, and 15-38 are canceled. Accordingly, the bases for the rejections are removed.

New Claims 39-44

The newly added claims are fully supported by the original application. In particular, claims 39-56 find support in the application at least in Figures 2 and 5 and at least at page 2, lines 15-24; page 7, lines 14-16; page 8, lines 1-27; page 10, lines 9-21; and page 11, lines 3-23. No new matter is added.

Independent claim 39 recites “when the received packet is addressed to the host computer [in a power-managed state] and the port identifier does not match the port number, discarding the received packet using the port filter without waking up the host computer,” and “when the received packet is addressed to the host computer and the port identifier matches the port number, sending a wake-up message from the port filter to the host computer.” Graham-Cumming, McKaughan, and Novoa, alone or in combination, fail to disclose or suggest this feature.

Graham-Cumming discloses a process of maintaining an up-to-date application/port mapping table. (See *Graham-Cumming*, Abstract, col. 3, lines 25-52). In particular, Graham-Cumming discloses a system to dynamically determine network applications associated with any

ports being used by packets on the network, allowing the packets to be properly routed. (*Id.*, Abstract.) To that end, Graham-Cumming discloses a system to identify the port and/or to assign a port to a packet. (*Id.*, col. 5, line 59 to col. 6, line 34.) In some instances, Graham-Cumming discloses assigning the packet to a default application. (*Id.*, col. 7, lines 51-54). Thus, Graham-Cumming, instead of determining a match, discloses analyzing the packet using an application identification module to locate and assign the correct application.

Further, Graham-Cumming does not appear to disclose any determination of the network address of the computer, but rather relies upon payload content to determine the application for further processing (i.e., a valid URL or an HTTP address), indicating an HTTP application. (*Id.*, col. 3, lines 25-38.)

Additionally, though Graham-Cumming mentions discarding packets if they are not identified using an application identification module (i.e., software running on the computer) (*Id.*, col. 7, lines 51-54; col. 8, lines 25-38; and Figure 4), Graham-Cumming discloses discarding such packets only after analyzing packets using a packet analysis module and an application identifier module, which are components of a software product that executed on a CPU of a general purpose computer. (*Id.*, col. 5, line 59 to col. 6, line 12; col. 6, lines 18-25 and col. 6, line 62 to col. 7, line 54; and Figure 4, and col. 8, lines 25-37.) Thus, in Graham-Cumming, the host computer cannot be in a power managed state as recited in independent claim 39, because the CPU of Graham-Cumming is used to execute the software application to process the packets. (*Id.*, Figure 4; and col. 8, lines 25-38.) Since the computer is already operational to analyze the packets, Graham-Cumming makes no mention of sending a wake-up signal. Thus, Graham-Cumming does not disclose or suggest all of the elements of independent claim 39.

McKaughan does not overcome the deficiencies of Graham-Cumming. McKaughan discloses waking the host computer in response to packets that match a list of packets or in response to packets addressed to the host computer. (See *McKaughan*, Abstract; Figure 4, element 480; and col. 4, lines 44-51). Thus, in either case (i.e., when either the packet pattern matches or the packet is addressed to the host computer), McKaughan wakes the host computer.

McKaughan discloses an exception for a packet that is “specifically designated as a ‘REJECT’ packet.” (*Id.*, Figure 4, element 430; col. 7, lines 29-38 and line 53; col. 8, lines 52-58 and 65-67; and col. 9, lines 34-40.) McKaughan explicitly teaches:

Directly addressed packets are handled differently than broadcast packets. In the preferred embodiment, **any incoming packet that is directly addressed to the remote computer 11a that is in the power down state will be processed by the computer, unless the incoming packet has been specifically designated as a “REJECT” packet.** (*Id.*, col. 9, lines 34-40 (emphasis added).)

The only example of a REJECT packet provided by McKaughan identifies a general category of packets, namely “browse master elections in domain SYS-WIN4.” (See, e.g., *Id.*, col. 7, line 53.) Accordingly, McKaughan does not disclose or suggest “when the received packet is addressed to the host computer and the port identifier does not match the port number, discarding the received packet using the port filter without waking up the host computer,” as recited in independent claim 39.

Further, Applicant respectfully submits that the arrangement of McKaughan fails to account for the problem identified in the background of the present application at page 2, lines 15-24, namely “probe packets.” In particular, the present application describes network probes that are used by hackers to identify running applications or services that can be attacked. Such probes are typically addressed to the destination address of the host computer. In McKaughan, unless such a probe is specifically identified in advance as a REJECT packet, the network card would wake the host computer in response to the probe “wasting the host’s time and energy and making the host vulnerable to attack.” (See *Application*, page 2, lines 15-24.)

Further, combining Graham-Cumming with McKaughan does not overcome this problem. In particular, Graham-Cumming attempts to resolve the missing port address, thereby correcting the deficiency and making it possible for a directly addressed packet from a hacker to reach the port of the host computer, even if the addressed packet did not include the correct port identifier, since Graham-Cumming’s packet analysis and application identifier modules are intended to locate the application and update the mapping table.

Turning to Novoa, Novoa discloses an encryption/decryption scheme where only a source with the right encryption key can send an encrypted wake up message to the remote computer to wake it up. (*Novoa*, Abstract). However, in Novoa, the decision to wake the host computer is based on the network address and the encryption pattern (*Id.* (emphasis added)), and is not related to the port identifier of the packet. Accordingly, Novoa fails to overcome the deficiencies of McKaughan and Graham-Cumming.

Thus, Graham-Cumming, McKaughan, and Novoa do not disclose or suggest all of the elements of independent claim 39, or of claims 40-44, at least by virtue of their dependency from independent claim 39.

New Claims 45-51

Independent claim 45 recites discarding the packet if it is not addressed to the host computer. Independent claim 45 further recites, after determining that the packet is addressed to the host system, “when the port identifier of the packet matches a port number of one or more port numbers associated with a process running on the host system, sending a wake-up message from the port filter to the host computer” and “when the port identifier does not match a port number of the one or more port numbers, discarding the packet using the port filter.” As discussed above, Graham-Cumming, McKaughan, and Novoa, alone or in combination, fail to disclose or suggest these elements. Accordingly, the combination of Graham-Cumming, McKaughan, and Novoa lacks at least two element of independent claim 45, and of claims 46-51, at least by virtue of their dependency from independent claim 45.

New Claims 52-56

The combination of Graham-Cumming, McKaughan, and Novoa fails to disclose or suggest a “pattern filter to discard or re-direct packets that are not addressed to the host computer without waking the host computer” and a port filter to determine whether packets addressed to the host computer also include “a port identifier that matches a port number associated with a process running on the host computer, the port filter to discard directed packets when there is no match, the port filter to send a wake-up signal to the host computer only when the port identifier matches the port number and the packet is addressed to the host computer,” as recited in independent claim 52. Thus, Graham-Cumming, McKaughan, and Novoa, alone or in combination, do not disclose or suggest at least one element of independent claim 52, and of claims 53-57, at least by virtue of their dependency from independent claim 52.

For at least the foregoing reasons, Applicant submits that claims 39-57 are allowable over Graham-Cumming, McKaughan, and Novoa, alone or in combination. Applicant respectfully requests consideration and allowance of the pending claims.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's undersigned attorney if such a call would in any way advance prosecution in this matter.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

SCHWEGMAN, LUNDBERG & WOESSNER, P.A.
P.O. Box 2938
Minneapolis, Minnesota 55402
(512) 492-6407

Date August 31, 2009

By / R. Michael Reed /
R. Michael Reed
Reg. No. 59,066